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EXAMINER

LAM, WAI YIP

ART UNIT	PAPER NUMBER
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2614

DATE MAILED: 08/11/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/870,045

Applicant(s)

CANDELORE, BRANT L.

Examiner

Wai Lam

Art Unit

2614

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
 - If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
 - If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
 - Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-28 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1 - 28 is/are rejected.
- 7) ☒ Claim(s) 1, 12 is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. ____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 2/02
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: ____

DETAILED ACTION

Claim Objections

1. Claims 1 and 12 are objected to because of informalities. Appropriate correction is required.

As to claim 1, "the demodulator" should be "a demodulator" because demodulator is never previously mentioned. Also, "a source of content" should be changed to "a source of program data with content" to avoid an objection argument noted above. Changing "the program data with the content" to "a program data with the content" would also avoid this objection.

As to claim 12, "the copy protection status" should be written as "copy protection status" instead.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. Claims 1 – 6, 10 – 11, 15 – 19, 23 – 27 are rejected under 35 U.S.C. 102(e) as being anticipated by U.S. Patent No. 6,628,891 (Vantalon et al).

As to claim 1, Vantalon et al. illustrates a unit that performs the function of the present claim. Claim 1 recites the limitation of “a source of content in a scrambled format and a conditional access unit that de-scrambles the content such that the contents is in a clear format”. Vantalon et al. teaches an input T_{sin} (Column 17, line 22) that is a scrambled signal. Vantalon et al. also teaches a conditional access de-scrambler 80 inside cipher processor 79 (Figure 11) that descrambles a scrambled incoming digital signal and produce an output T_{sclear} (Column 9, lines 30 – 32). Claim 1 further recites “a switching unit, couple to the demodulator and the conditional unit, that routes the program data with the content in the clear format in response to instructions from a central processing unit”. Vantalon et al. teaches a switching unit (cipher bank 54 in Figure 10), coupled to a demodulator (receiver 10 in Figure 2D, Column 4, line 55) and a conditional access unit (cipher processor 79) that routes the program data with the content in the scrambled format (T_{sp} in Figure 10) and the program data with the content in the clear format (T_{sc} in Figure 10, also in Column 9, lines 24 – 25) in response to instructions from a central processor unit (microprocessor unit 42 in Figure 5).

As to claim 2, see rejection of claim 1 and note that Vantalon et al. also teaches the source of content in a scrambled format T_{sin} is selected from a demodulator (receiver 10 in Figure 2D, Column 4, line 55).

As to claim 3, see rejection of claim 1 and note that Vantalón et al. teaches the switching unit (Cipher bank 54 in Figure 10) contains a multiplexer that selects one of the input streams for processing (Column 9, lines 4 – 10).

As to claim 4, see rejection of claim 1 and note that Vantalón et al. teaches a switching unit (cipher bank 54, Figure 11) that routes the program data with the content in the scrambled format (input Tsin) to the conditional access unit (cipher processor 79).

As to Claim 5, see rejection of claim 1 and note that Figure 13 in Vantalón et al., the three encoders (unit 155, 156, and 157), coupled to switching unit (cipher bank 54 in Figure 10) encode the program data with the content in clear format (Tsclear). Furthermore, the output Tsprotected in figure 13 is multiplexed with Tsclear before transmitting the program data with the content in the clear format to a display unit. Therefore, the program data with the content in the clear format is clearly encoded before the transmission of the program data with the content in a clear format to a display unit.

As to Claim 6, see rejection of claim 1 and note the logic presented in claim 5. Tsprotected is encoded into a scrambled format and coupled to the switching unit. Tsout (Figure 43) is the final output comprising tsprotected and is routed to the decoder in set-top box 16 (Figure 2D, also column 7, lines 8 - 17) that is ultimately routed to either a display unit or a recording device (Column 4, lines 62 – 66).

As to claim 10, Vantalón et al. teaches a program viewing unit in Figure 43. The viewing unit comprises a demodulator (in-band receiver 30 in Figure 43) which outputs program data with the content in a first scrambled format Tsin (Column 17, lines 20 – 23). This reads on the claimed demodulator unit that outputs program data with content in the first scrambled format. This viewing unit also comprises a de-scrambler (Unit 443 in Figure 43) that de-scrambles the content into a first clear format, and a re-scrambler (Unit 444 in Figure 43) that re-scrambles the first clear format into a second scrambled format (Column 17, lines 37 – 42). Unit 444 reads on the re-scrambler that re-scrambles the content in the first clear format into content in a second scrambled format.

As to claim 11, Vantalón et al. also teaches a unit of claim 10 wherein the re-scrambler uses a local key (Figure 13, Column 17, lines 35 – 37).

As to claim 15, see rejection of claim 11 and note that Vantalón et al. also teaches the use of a local key (Figure 13, unit 161), which is part of the re-scrambler, is obtained from microprocessor unit 42 (Column 17 lines 43 – 47).

As to claim 16, see rejection of claim 10 and the present claim further limits that a de-scrambler is controlled by a conditional access mechanism coupled to receive information, wherein the information is selected from the group consisting of ordering information, billing information, payment information, credit information, sponsor information, preview information, viewer information, and parental control information. However, Vantalón et al. also teaches that a de-scrambler (Conditional access de-scrambler in Figure 11) is controlled by a

conditional access mechanism (cipher processor 79 in Figure 11) coupled to receive billing information. This is done by way of the out-of-band decoder in Figure 4. The out-of-band data decodes out-of-band data and handles the digital signals for the related services, such as video-on-demand commands, security data, e-commerce transactions, etc (Column 5, lines 57 – 60). This out-of-band data is coupled to transport stream co-processor 40, wherein the conditional access unit is located inside transport stream co-processor 40. Also note that the out-of-band channel is coupled to receiver system in Figure 1 (Column 5, lines 8 – 15), wherein the receiver system gets its content from the content provider. And finally, the definition of a content provider is an entity that manages the distribution or broadcast of the content, billing, customer service, etc. Therefore, the de-scrambler as claimed is coupled to receive billing information.

As to claim 17, see rejection of claim 10 and note that Vantalon et al. teaches that the re-scrambler is coupled to receive information on copy generation management. Referring to Figure 43, REC. key 445 is used to manage the copying of the current signals (Column 17, lines 37 – 41).

As to claim 18, see rejection of claim 10, and note Figures 43, and 44 in Vantalon et al. Vantalon et al. discloses that playback mechanism 447 may be part of the recorder mechanism 446 (Column 17, lines 63 – 64). Since unit 447 is unit 446, it is inherent that unit 447 must be coupled to scrambler 444.

Therefore, de-scrambler 451 is coupled to receive information from scrambler 444.

As to claim 19, see rejection of claims 18 and note that the system Vantalon et al. discloses also comprises a switching unit (MUX 453 in Figure 44). MUX 453, coupled to receive an input from the conditional access mechanism and scrambler 452 in Figure 44, and communicate the input to a display unit (digital TV display 13 in Figure 44), switches between two input sources; the second clear format (playback recorded signal) and the first clear format (the live incoming signal) (Column 18, lines 15 – 18).

As to claim 23, Vantalon et al. teaches a method for managing program data, comprising transmitting the program data to a switch (Figure 43 cipher bank 54), and selecting the switch to transmit the data to a conditional access mechanism (cipher processor 79) via multiplexer (MUX 76) in Figure 10. The program data T_{sin} is then routed to conditional access module 17 where conditional access module 17 (detail drawing of conditional access module in Figure 4) is the same construction as conditional access mechanism 440 in Figure 43 (Column 17, lines 12 – 14).

As to Claim 24, see rejection of claim 23 and note that Vantalon et al. discloses a method where MUX 76 in the switching unit (cipher bank 54) selects an input stream program data and transmit that program data to the conditional access descrambler in Figure 11 (Column 9, lines 3 – 6).

As to claim 25, see rejection of 23 and note that the selection is performed via MUX 76, where the selection signal obtained by way of the VPB bus (Column 9, lines 8 – 10). The VPB bus is a peripheral bus is the communication medium between microprocessor 60 and the switching unit (cipher bank 54) as illustrated in Figure 5 (Column 7, lines 36 – 38). Therefore, Vatalon et al. reads on the present claim where the selection is performed by a central processing unit.

As to claim 26, see rejection of claim 23 and note that the program data is routed from a demodulator denoted as in-band receiver 10 in Figure 2D.

As to claim 27, Vantalon et al. discloses an apparatus that reads on to the present claim. Conditional access mechanism 440 in Figure 43 discloses an apparatus for transmitting program data to a switch (cipher bank 54 inside unit 440 illustrated by Figure 10), and means for selecting the switch to transmit data to a conditional access descrambler unit (cipher processor 79 inside switch unit 440 illustrated by Figure 10, 11).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

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The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
 2. Ascertaining the differences between the prior art and the claims at issue.
 3. Resolving the level of ordinary skill in the pertinent art.
 4. Considering objective evidence present in the application indicating obviousness or nonobviousness.
3. Claims 7,8,20 – 22, 28 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 6,628,891 (Vantalon et al.) in view of U.S. Patent No. 6,515,680 (Hendricks et al).

As to claim 7, Vantalon et al. teaches a program viewing unit corresponding to claim 1. Vantalon et al. also teaches a configuration of a set-top box unit, coupled to a switching unit, (Figure 2C) which transmits the program data with the content in a clear format to a viewing unit.

Vantalon et al. does not teach a program viewing unit of claim 1 comprising a de-multiplexing unit.

However, Hendricks et al. discloses a set-top box (Figure 6) that receives the individually compressed program and control signals, where the signals are de-multiplexed, decompressed, converted to analog signals (if necessary) and either placed in local storage (from which the menu template may be created), executed immediately, or sent directly to the television screen (Column 11, lines 43 – 53). This would read on the claimed de-multiplexer coupled to the switch unit since the de-multiplexer would be built in to the set-top box receiver.

It would have been obvious for a person with ordinary skill in the art at the time of the invention was made to modify the set-top box of Vantalon et al. using the de-multiplexer of Hendricks and transmit the program data with the content in a clear format to a viewing unit for the purpose of allowing 2 or more signals to be multiplexed and transmitted at the same time over a single channel.

Claim 8 corresponds to claim 7, where Vantalon et al. also discloses that the switching unit is coupled to an encoding unit, which encodes the program data in a clear format prior to transmittal to the viewing unit, as discussed in the rejection of claim 5.

As to claim 20, Vantalon et al. teaches a program viewing unit in Figure 43 comprising all the components listed in the present claim. The program viewing unit of Vatalon et al. comprises a central processing unit (microprocessor unit 42 from Figure 4, which is inside conditional access mechanism 440 in Figure 43), a demodulator unit (in-band receiver 30 in Figure 43 as discussed above in claimed 10), a conditional access unit (cipher processor 79 as discussed in claim 1), a de-multiplexer unit(as discussed in claim 7), an encoding unit (as discussed claim 5), and a switching unit (cipher bank 54 in Figure 10, which is inside conditional access mechanism 440 in Figure 43) coupled to the CPU, demodulator unit, the conditional access unit, the de-multiplexer unit, and the encoding unit. The switching unit (cipher bank 54) is also programmable by the CPU (microprocessor unit 42) to route program data between the components.

As to claim 21, see rejection of claim 20 and note that Vantalón et al. also discloses that the conditional access unit (cipher processor 79) within the program viewing unit comprises a conditional de-scrambler and a copy protect scrambler.

As to claim 22, see rejection of claim 20 and note that Vantalón et al. also discloses that the condition access unit (cipher processor 79) is a processor itself that comprises a conditional access de-scrambler.

As to claim 28, see rejection of claim 7 and note that Vantalón et al. discloses a machine-readable medium (smart card) interface (Figure 8) and that the removable smart card is adapted to be connected to the microprocessor unit 42 for supplying secured information thereto (Column 6, 5 – 53). Furthermore, microprocessor unit 42 provides a CPU function for the conditional access module (Column 6, lines 42 – 43). It is inherent that smart card must supply the secured information to microprocessor 42 in order for the microprocessor to provide the CPU function for the conditional access module, where the switch (cipher bank 54) is located.

4. Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 6,628,891 (Vantalón et al.) in view of U.S. Patent No. 6,515,680 (Hendricks et al) as applied to claim 7 above, and further in view of U.S. Patent No. 6,219,634 (Levine).

As to claim 9, Vantalon et al. teaches a method of encoding as discussed in claim 5. And also, Hendricks et al. teaches the use of a de-multiplexer as discussed in claim 7. What Vantalon et al. and Hendricks et al. does not teach is a method of encoding selected from the group consisting of Digital Transmission Copy Protection (DTCP), watermark, and High Bandwidth Digital Copy Protection (HDCP).

However, Levine teaches a method and apparatus for a watermark encoder (Column 5, lines 11 - 14). This reads on the claimed watermark-encoding scheme.

It would have been obvious for a person ordinary skilled in the art at the time of the invention was made to modify the method of encoding taught by Vantalon et al. (Discussion in claim 5), together with the de-multiplexing unit (Discussion in claim 7) by Hendricks, using a watermark encoder as the selected method of encoding as taught by Levine, for the purpose of inserting identifying data in digitized signals having valuable content such that duplication of the digitized signals also duplicates the identifying data and the source of such duplication can be identified (Levine, Column 1, lines 59 – 62). This encoding method would also help protect digitized signals from being illegally copied or help identify the source of illegally copied signals.

5. Claim 12 is rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 6,628,891 (Vantalon et al.) in view of U.S. Patent No. 6,850,252 (Hoffberg).

As to claim 12, see rejection of claim 11, and note that Vantalón et al. discloses that the out-of-band channel 21 in Figure 3 handles the digital signals for the related services, such as video-on-demand commands, security data, e-commerce transactions, etc (Column 5, lines 57 – 60). The out-of-band decoder in Figure 4 is connected to transport stream co-processor 40, which in turn is connected to the microprocessor 42. Any security data coming in from the out-of-band channel is interpreted to be processed by microprocessor unit 42.

What Vantalón et al. does not teach is that the local key is generated in part by using the copy protection status of the content.

However, Hoffberg discloses a method on how a key can be generated in part by using the copy protection status of the content (Column 120 lines 64 – 77, Column 121, lines 1 – 14). This would read on the claimed local key generated in part by using the copy protection status of content.

It would have been obvious for a person ordinary skilled in the art at the time of the invention was made to modify the program viewing unit of Vatalón et al. using generation of the local key in part by using copy protection status of the content as taught by Hoffberg, for the purpose of maintaining content quality without degradation while preventing unauthorized copying (Hoffberg, Column 120, lines 47 – 49).

6. Claims 13, 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Patent No. 6,628,891 (Vantalón et al.) in view of U.S. Patent No. 6,289,455 (Kocher et al.).

As to claim 13, Vantalon et al. has been discussed above. What Vantalon et al. does not teach the generation of local key in part by using keys that are downloaded from a service operator.

However, Kocher et al. teaches a prepayment system wherein the user provides a payment (or a commitment to pay) then receives a content decryption key that allows access to the purchased content (Column 2 lines 15 – 19). Since a prepayment or a commitment to pay is necessary before the reception of the decryption key, the prepayment scheme would read on the claimed key generation method in part by using keys downloaded from a service operator.

It would have been obvious for a person ordinary skilled in the art at the time of the invention was made to modify generation of a local key as taught Vantalon et al. (Discussion in claim 12), using the generation of a local key in part by downloading a decryption key as taught by Kocher et al. wherein the decryption key downloaded is analogous to the re-scrambler key as claimed. The purpose for this modification is to thwart attackers that do not have the correct decryption keys to access purchased content (Kocher et al. Column 2; lines 18 – 19, 31 – 33).

As to claim 14, see rejection of claim 13 and note that Kocher et al. also discloses that the content provider, which is analogous to the service operator as claimed, with means of communication including without limitation of modem, radio, satellite, cable, etc. (Column 9, line 66, Column 10, lines 1 – 2). The means of communications mentioned are analogous to having a content provider

consisting of cable operator, telephone operator, Internet operator, broadcaster, and Direct Broadcast Satellite (DBS).

Conclusion

7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

U.S. Patent No. 6,742,182 (Perlman) teaches descrambling a scrambled signal using a cable box for authentication.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Wai Lam whose telephone number is (571) 272-2827. The examiner can normally be reached on Monday - Friday 7:30a.m. - 5:00p.m.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John Miller can be reached on (571) 272-7353. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Art Unit: 2614

James [Signature]
7-28-05